

Code No: 156DR

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, February - 2023

FUNDAMENTALS OF INTERNET OF THINGS

(Common to CE, EEE, ME, CSE, EIE, IT, MCT)

Time: 3 Hours

Max. Marks: 75

- Note:** i) Question paper consists of Part A, Part B.  
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.  
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

**PART – A****(25 Marks)**

- 1.a) Define 6LoWPAN. [2]
- b) Explain about transport layer. [3]
- c) What is an actuator? [2]
- d) What are various types of sensors? Explain. [3]
- e) What are advantages of Raspberry Pi? [2]
- f) Describe classes in Python programming. [3]
- g) Define SDN. [2]
- h) Discuss about data flow in MapReduce. [3]
- i) What are advantages of Cloud? [2]
- j) Explain about connected vehicles using IoT. [3]

**PART – B****(50 Marks)**

- 2.a) Explain about IoT communication APIs in detail.
  - b) What are communication protocols? Explain. [5+5]
- OR**
- 3.a) Discuss about IoT functional blocks.
  - b) What are IoT protocols? Explain. [5+5]
4. What is Arduino Programming? Explain about basics of Arduino coding. [10]
- OR**
5. Explain in detail about interoperability in IoT. [10]
  6. Discuss about Python packages of interest for IoT in detail. [10]
- OR**
7. Explain about implementation of IoT with Raspberry Pi. [10]
  8. What are SDN layers? Explain in detail with a neat diagram. [10]
- OR**
- 9.a) Explain about Hadoop cluster setup.
  - b) Discuss about setting up a Storm cluster. [5+5]
10. Explain about home automation using IoT in detail. [10]
- OR**
11. Discuss about environment monitoring using IoT in detail. [10]

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